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REVIEWS

Howell's Flora of Northwest America*

The seventh fascicle of Howell's Flora of Northwest America has now appeared. This finishes the first part, "Phanerogamae." The title is perhaps a little misleading, as the flora does not cover the western part of the British possessions, or Alaska. It would have been more appropriate if the title had been a "Flora of the Northwestern United States," as it is a manual of the botany of Washington, Oregon and western Idaho. Only those who have been actively engaged in writing manuals of systematic botany can imagine what such an undertaking means, what difficulties are met with and what an amount of work is needed. If the fact is taken into consideration that Mr. Howell had to work far away from our large collections and botanical libraries with scarcely any other facilities than those afforded by his private library and collections the excellence of the work is really surprising. The preliminary work on the flora was begun as early as 1882 and in 1896 the manuscript of the first fascicle was ready. A new difficulty now presented itself. He could not find in Portland a type-setter who could set the type for such a book, and Mr. Howell learned the trade and set the type himself. The first fascicle was issued in 1897 and the others at intervals of a year or two. The book contains 792 pages of compact descriptions and an index of 24 pages.

It is evident that Mr. Howell began the work with the intention of giving descriptions drawn by him from actual specimens, where it was possible. When such were not found in his herbarium he tried to borrow from fellow botanists. In this he did not always succeed and had to reprint the original description. This method of course meant an enormous amount of correspondence and was delaying the work. It appears as if the method was partly discarded towards the end of the work, as it there seems to be more of a compilation. This may be said

* Howell, T. A Flora of Northwest America. Vol. I. Phanerogamae. 8vo. Pp. 1-792 + Index. Portland, Oregon. 10 Au 1903. [Issued in seven fascicles, 1897-1903.]

especially of the difficult family Gramineae, where the last monograph is more or less closely followed. In many cases this was a very commendable way, but in others not, as, for example, in the treatment of *Poa*, where he follows Professor Beal. One improvement he has made on the latter's work, viz., in retaining *Poa Buckleyana* and *P. Fendleriana* and their allies in *Poa*. He places them under a subgenus *Atropis*, copying Beal's characters of the genus *Atropis* (which name however does not belong there but to *Puccinellia*), but not noticing that scarcely one half of the species referred there by Beal agree with the definition; nor did he know that *Atropis Lettermanni* Beal (*Poa Lettermanni* Vasey) and *Poa Brandegei* described in Beal's work are the same species and that the types of both were collected at the same station.

As no work has been published before on the flora of the region, Mr. Howell had to draw his information from a thousand and one scattered publications. We know that many times the same species has been described under different names by different authors (one *Aster* from Idaho, *A. Jessicæ*, has received not less than four names). A good deal of sifting had therefore to be done and it is remarkable how well Mr. Howell has succeeded without having access to the types. It would be surprising, however, if he had not gone amiss sometimes. One such case we have noticed: *Sporobolus gracillimus* and *S. filiformis* were both based on *Vilfa depauperata* v. *filiformis* Thurber, and hence the same.

The numerous publications and segregations of recent date have of course caused considerable trouble. Some of our contemporary phytographers have a custom of describing species without indicating the relationships. The author of a monograph or manual, if he does not have the chance of seeing the types, must be a very good guesser if he happens to place the species in the right section of the genus. Mr. Howell guessed well as a rule, but missed occasionally, as, for example, when he placed *Gentiana anisosepala* Greene, next to *G. affinis*. It should have been placed with *G. tenella* and *G. acuta*.

Another kind of difficulty arises when one of the modern splitters breaks up a species, supposed to be transcontinental,

into several geographical species and does not give exact limits of their ranges. How can a botanist without access to all or most of the larger herbaria know if he is to include or exclude the original species, if he has not authentic material himself? The "Flora of Northwest America" therefore happens to contain several species not growing within a thousand miles of the region covered, *i. e.*, as far as can be judged from specimens in the collections of the New York Botanical Garden and Columbia University. Such species are, for instance *Scrophularia Marilandica* and *Polygonum erectum*, not found west of Nebraska; *Eriogonum corymbosum* and *Graphephorum Wolfii*, not north of Colorado; *Salix saximontana* and *Geranium Fremontii*, not north or west of Wyoming; *Tofieldia glutinosa*, *Poa glauca* and *P. laxa*, only found in the northeastern part of the continent.

With regard to nomenclature, Mr. Howell has been progressive, following the Rochester Code with slight modification and using in most cases the generic names adopted in the second edition of Heller's Catalogue. As to the limitation of genera he has been somewhat radical, adopting most of the segregations made in later years. As to the limitation of species he has on the contrary been rather conservative, ignoring many of the newer finer splits and proposing very few new ones himself. Those that he has proposed are well founded. He has admitted very few varieties. Those that he has admitted were probably not well known to him. In most cases he has raised the varieties to species if they could be well recognized; if not they have been ignored.

Whatever smaller defects the work may have, it will be of great value to the student of the botany of the Columbia Valley region. It will be for that region what Chapman's Flora has been for the South, Coulter's Manual for the Rockies and the Botany of California for the southern portion of the Pacific Slope. We need now a flora of the southwestern United States and the Great Basin.

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